

ARCTIC AND ANTARCTIC METEOROLOGICAL OBSERVERS.

The following expeditions will start for the Polar regions during 1901:

1. The Zeigler-Baldwin, to be led by Mr. Evelyn B. Baldwin, who lately resigned from the Weather Bureau for this purpose, the funds to be contributed by Mr. William Ziegler, of New York.

2. A Russian expedition, commanded by Vice-Admiral Makaroff, in the *Ermak*, a vessel constructed to push its way through ice 14 feet thick.

3. A Canadian expedition, in charge of Captain Bernier, in the *Scottish King*.

4. A German expedition; plans not yet published.

5. A joint expedition by Dr. Nansen and the Duke of Abruzzi.

6. Peary and his companions will finish the exploration of Grinnell Land and return home.

7. Dr. Robert Stein and his companions will complete the exploration of Ellesmere Land.

8. A relief expedition to Franz Josef Land, under the command of Captain Stoecken, and apparently at the joint expense of Nansen and Abruzzi.

9. Baron Toll will send a party from the Kara Sea eastward along the Siberian coast.

Capt. J. E. Bernier, of Quebec, proposes to travel by the route taken by the wreck of the *Jeanette*, with dogs, reindeers, and sledges, over the ice from the Lena or Bennett Island region. The trip may last two and a half years.

In the Southern Hemisphere, the British and German expeditions will start in August, 1901, and divide the Antarctic regions between them; Nordenskiöld for Norway and Arcotowski for Belgium and the Argentine Republic; all will be in the field during the greater part of 1901-3. The network of observations "will furnish a thorough knowledge of the meteorology of all that part of the Antarctic and form a most important contribution to the study of the general atmospheric circulation."

TYPHOON OF NOVEMBER 10 IN HONGKONG.

Mr. Rounseville Wildman, Consul General at Hongkong, under date of November 30, reports as follows:

Between the hours of midnight and 9 a. m. on Saturday, the 10th of November, this colony was visited by the most disastrous typhoon that it has experienced since 1874. It caused the loss of over 200 lives, some 270 junks and fishing boats in the harbor, and the loss of the government's new dredger, costing £40,000 and the foundering of H. M. S. gunboat *Sandpiper*. The American barque *Benjamin Sewall* broke her cable and drifted on to the Chinese gunboat *Pupo*, carrying away her masts, spars, and boats. The damage to the *Sewall* running ashore was about \$10,000. The American barque *State of Maine*, Captain Colcord, was fortunate in being able to save 8 Chinese from a sinking junk alongside. The greatest loss was caused by the sudden veering of the wind at 8 o'clock. The damage to the city was not as great as to the shipping in the harbor, although iron lamp posts and telegraph posts were twisted and bent, and all buildings of a temporary character were blown down and those in process of construction badly damaged. The consular buildings sustained the loss of all the blinds on one side of it and of a large portion of the windows on the other side. The trees and foliage about the grounds were badly wrecked, as they were all over the city.

EQUINOCTIAL STORMS.

Mr. J. T. Probert, Voluntary Observer at Paterson, N. J., reminds us that "a great deal of the dislike to the Weather Bureau comes from ignorance of its true objects and is associated with reliance upon folk-lore and astrology." His own

rule is to make monthly reports to be printed in the local papers, and also daily report and special extra articles upon subjects that are at the moment likely to attract attention; he also puts his daily weather map in a public place where it is very closely watched and where he can answer the questions that are asked. "Thus I have made the daily weather map to become a public teacher and the daily and monthly reports a public instructor." Mr. Probert has also shown his enthusiasm in this study of the weather by an article on equinoctial storms, published in the March report of the New Jersey section, from which we make the following abstract:

From my own records I glean the following data, covering a period of ten years, which I consider a fair test, and on only one occasion can a truly equinoctial storm be said to have come. This was one of those unusual storms which happen once or twice in a lifetime; it occurred on the 18th and 19th of September, 1894, and gave the very large rainfall of 7.44 inches in forty-eight hours, while the 20th, 21st, and 22d were clear days. As a better test, and to give as wide a range as possible, I have tabulated the storms, both great and small, where any rain has fallen, for the week preceding, the week of, and the week following the supposed storm week, and as a truer test I have taken the March and the September equinoxes, with number of rainy days, and also the amount in total; leaving out the present year, as it is incomplete without the month of September. The first table is for the spring equinox, and the second, the fall equinox.

March.

Year.	11th to 18th.		18th to 24th.		24th to 31st.	
	Storms.	Rainfall.	Storms.	Rainfall.	Storms.	Rainfall.
		<i>Inches.</i>		<i>Inches.</i>		<i>Inches.</i>
1899.....	3	2.25	3	0.76	4	1.55
1898.....	2	0.23	3	1.45	3	2.50
1897.....	3	0.96	3	1.01	1	0.29
1896.....	3	2.88	3	2.34	2	1.24
1895.....	3	0.80	1	0.08	2	0.25
1894.....	3	0.27	3	0.77	2	0.47
1893.....	2	1.16	3	0.85	none.	.....
1892.....	2	1.14	2	0.31	1	0.22
1891.....	3	0.86	3	0.95	3	2.70
1890.....	2	0.81	3	2.34	4	2.54
Total storms and rainfall.	26	11.36	27	10.87	22	11.76

This table most certainly will not sustain the idea of great storms for the March equinox, and I may say that the prevailing wind in March of every year is from the northwest, which does not bear out equinox idea.

Now, let us see how the month of September will be bear out the idea of storms. In this I have taken the same number of days.

September.

Year.	11th to 18th.		18th to 24th.		24th to 31st.	
	Storms.	Rainfall.	Storms.	Rainfall.	Storms.	Rainfall.
		<i>Inches.</i>		<i>Inches.</i>		<i>Inches.</i>
1899.....	2	0.96	3	2.01	2	1.50
1898.....	2	0.85	1	0.77	1	0.03
1897.....	2	0.05	1	0.07	2	0.84
1896.....	3	0.74	1	0.30	1	1.29
1895.....	2	0.39	.....	.....	2	0.50
1894.....	3	0.84	2	7.44	.....	.....
1893.....	3	1.48	3	0.21	1	0.45
1892.....	1	1.80	1	0.11	1	0.02
1891.....	.....	.....	.....	.....	.....	.....
1890.....	7	2.96	.....	.....	1	0.40
Total storms and rainfall.	25	9.54	12	10.91	11	5.03

With these facts in view, let any candid mind review the data as here presented, and see if the belief in equinoctial storms is not a popular delusion. I have taken a wider range in time than to have others as a better test than to place the time limit in a space of three or four days, and therefore better to demonstrate the utter falsity of the general idea, and do what I can to help dispel this popular delusion.

WEATHER BUREAU PUBLICATIONS FOR SCHOOL USE.

The Weather Bureau has issued four editions of a chart entitled Description of Cloud Forms. It comprises 11 half-

tone illustrations of the several cloud types, with names and descriptions and tables showing mean heights and velocities.

Through the zealous activity of one or more educational journals, the idea seems to have obtained that copies of these charts can be had for the asking. As a result the Bureau has been flooded with letters from children, apparently many of them yet in the primary grade, who ask for from one to ten copies each.

Although the chart was prepared primarily for the use of

Weather Bureau observers, yet copies will be sent to such educators as desire them for school-room work, provided that their applications show that they are teachers of the proper grade. One or two copies should suffice for the use of a whole class, and it is not thought necessary to send them to young pupils, as such.

In general, the Weather Bureau publications are not really useful to teachers and scholars of schools below the grades of high schools, academies, and colleges.

THE WEATHER OF THE MONTH.

By ALFRED J. HENRY, Professor of Meteorology.

CHARACTERISTICS OF THE WEATHER FOR DECEMBER.

The month of December, 1900, was not marked by any severe cold waves or by unusually stormy weather. Mean pressure was in excess of the normal over the central Rocky Mountain and Plateau regions, and also in eastern Tennessee, Georgia, the Carolinas, and Virginia. There were no marked cold waves in the eastern part of the country. West of the Mississippi and north of the thirty-fifth parallel temperature was generally in excess of the normal for the season. Over this same region precipitation was markedly deficient, except on the immediate coast of Washington, where there was an excess of 3 to 5 inches. The month as a whole was drier than usual, except along the immediate Gulf coast and from southern Alabama northeastward to the Carolinas. The chief characteristics were, therefore, (1) high pressure over the central Rocky Mountain and Plateau regions, (2) drought on the Pacific coast south of Washington and a general deficiency of rainfall over the major portion of the country east of the Rocky Mountains, (3) high temperatures and a marked deficiency in snowfall throughout the entire Rocky Mountain and Plateau regions.

PRESSURE.

The distribution of monthly mean pressure is graphically shown on Chart IV, and the numerical values are given in Tables I and X.

The distribution of monthly mean pressure for the current month over the western third of the country is typical of that which obtains in winter under clear skies and in dry weather in California, Oregon, Nevada, Arizona, and Utah, and quite generally elsewhere throughout the northern and middle Plateau regions. It is also typical of the conditions which cause high winter temperature from the northern Plateau eastward over the northeastern Rocky Mountain slope and northward over the British Possessions.

It appears that there is a tendency on the part of the highs and lows, which approach the coast of the United States in the neighborhood of latitude 50° north, to cross the Rocky Mountains in higher latitudes some years than in others. The high temperature and deficient rainfall in California and elsewhere on the Pacific coast are due very largely to this shifting in latitude of storms which come from the Pacific.

TEMPERATURE OF THE AIR.

The distribution of monthly mean surface temperature, as deduced from the records of about 1,000 stations, is shown on Chart VI.

The month, as a whole, was warmer than usual, and this is especially true of the country west of the Mississippi River and north of the thirty-fifth parallel of latitude. Over this

vast region temperature was uniformly above the seasonal average except in the Great Valley of California, where it was about 2° below the normal. Since the area of negative departures was exactly outlined by the contour of the valley it may be possible that the low temperature noted therein was simply the effect of air drainage on a large scale. The temperature of the air on all sides of the valley was above the normal.

The region of the greatest positive departure was in northern Montana and western North Dakota, where temperatures were from 8° to 10° above the seasonal average throughout the month. Maximum temperatures of 80° and upward were registered in southern Florida, in the Rio Grande Valley, southwestern Arizona, and southern California. The coldest part of the region of observation was in the Red River Valley of the North, when maximum temperatures of less than 40° were registered.

Freezing temperatures were experienced in central and southern Georgia, save on the immediate coast, in western Florida, and very close to the coast line in the State of Texas. The lowest temperatures of the month were recorded in northern Minnesota and in the mountain regions of Wyoming and Colorado.

The average temperature for the several geographic districts and the departures from the normal values are shown in the following table:

Average temperatures and departures from the normal.

Districts.	Number of stations.	Average temperatures for the current month.	Departures for the current month.	Accumulated departures since January 1.	Average departures since January 1.
New England	10	30.2	- 0.2	+15.1	+ 1.3
Middle Atlantic	12	36.4	+ 0.1	+23.3	+ 1.9
South Atlantic	10	47.8	+ 0.8	+11.8	+ 1.0
Florida Peninsula	7	61.6	+ 0.3	+ 1.2	+ 0.1
East Gulf	7	51.9	- 0.3	+ 4.6	+ 0.4
West Gulf	7	51.4	0.0	+13.9	+ 1.2
Ohio Valley and Tennessee	12	38.3	+ 0.1	+18.8	+ 1.6
Lower Lake	8	30.5	0.0	+17.8	+ 1.5
Upper Lake	9	26.0	+ 1.4	+24.6	+ 2.0
North Dakota	8	19.0	+ 5.1	+41.7	+ 3.5
Upper Mississippi Valley	11	29.9	+ 1.5	+25.6	+ 2.1
Missouri Valley	10	32.2	+ 3.6	+33.8	+ 2.8
Northern Slope	7	31.6	+ 6.7	+39.3	+ 3.3
Middle Slope	6	36.8	+ 1.9	+26.2	+ 2.2
Southern Slope	6	42.8	+ 1.0	+18.0	+ 1.1
Southern Plateau	15	40.7	+ 1.8	+ 9.0	+ 0.8
Middle Plateau	9	31.5	+ 3.6	+21.0	+ 1.8
Northern Plateau	10	30.2	+ 4.5	+24.8	+ 2.1
North Pacific	9	44.8	+ 3.0	+18.6	+ 1.1
Middle Pacific	5	49.0	+ 0.4	+ 8.7	+ 0.7
South Pacific	4	55.4	+ 2.7	+14.3	+ 1.2

In Canada.—Prof. R. F. Stupart says:

The mean temperature of December was considerably above average over the Dominion from Lake Superior westward to British Columbia. From Thunder Bay district to Manitoba the positive departure from average was 4° to 6°, and in western Assiniboia and in Alberta it ranged from 14° at Medicine Hat to 9° at Edmonton. In British Columbia it was as much as 10° on the Upper Mainland and but 5° on Vancouver Island.